REMARKS

Claims 1-4, 6, 11-13, 19-23, 26-35 of the subject application that are currently pending. In the accompanying amendment claims 19-23 have been cancelled.

Claim Rejections Under 35 U.S.C. § 102(e)

The Office Action rejects claims 1-2 under 35 U.S.C. § 102(e) as being anticipated by Foote, et al (US 2002/0028021), Applicant traverses.

Claim 1 includes the following limitations:

> acquiring a video stream;
> dividing said video stream into a plurality of sub-sections;
> determining a probability of whether a transition effect is present at one of the plurality of sub-sections of said video stream; and
> embedding said probability into said sub-section of said video stream.
>
> (Claim 1, Emphasis Added)

Regarding Claim 1, the Office Action states:

> Regarding claim 1, Foote '021 discloses "method for processing video" (i.e. fig. 2, abstract), comprising; "acquiring a video stream" (i.e. fig. 2), and "dividing the video stream into a plurality of sub-sections, and determine the probability of whether a transition to a separate sub-section is present...." (i.e. abstract, lines 22+, page 12, 0136, and page 13, 0146, line 13-14 from the bottom of the page), and "embedding a probability of the transition into the sub-section of video stream" (i.e. fig. 2, col. 4, 0064, lines 12-15).
>
> (Page 3, Office Action mailed August 12, 2004)

Foote describes techniques for classifying video frames using statistical models of transform coefficients (see Abstract). In particular, Foote describes a classifier 206

that takes video features 208, and inputs the video features 208 into each of image class statistical models 202-205. This results in a classification of each frame of a video file 201 into one of the image classes represented by the image class statistical models 202-205. The image class determined by the classifier 206 to correspond to a frame of the video file 208 is indexed onto a class labeled video 207. Thus, the class labeled video 207 includes information associated with each frame indicating the image class to which the frame belongs (see paragraph 64). The class labeled video 207 does not include a probability of whether a particular frame is of a certain class but instead merely maps a frame to an image class.

In paragraph 136, Foote describes a step 3002, wherein the probability of a feature vector being produced by an image class statistical model is computed. The step 3002 is used to classify a frame into an image class. However, Foote fails to teach or suggest determining a probability of whether a transition effect is present, as recited in claim 1.

Because Foote does not teach all limitations of claim 1, it is respectfully submitted that Foote does not anticipate claim 1.

Further, given that claims 2-4, and 6 depend on claim 1, it is respectfully submitted that these claims are also not anticipated by Foote.

Claim Rejections Under 35 U.S.C. § 103

In the Office Action, claims 3, 4, 6, 11-13, 19, 21-23 and 26-29, have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Foote in view of Wilcox, et al (US 6,072,542).

The rejection of claims 3, 4, and 6 under 35 U.S.C. § 103 is premised on Foote teaching the determining, and embedding limitations of claim 1. However, as argued above, Foote does not teach the determining and embedding limitations of claim 1. Thus, it is respectfully submitted that claims 3, 4, and 6 are not obvious in view of the combination of Foote and Wilcox, as stated in the Office Action.

Regarding claim 11, this claim includes the following limitations:

> acquiring a first shot and a second shot from a plurality of video streams, said shots comprising a transition free video stream;
> determining a duration of a transition sequence based on probability distribution;
> generating a video sequence comprising the transition sequence from said first shot to said second shot for said determined duration; and
> training a classifier to detect a transition effect within said generated video sequence.
>
> (Claim 11, Emphasis Added)

With regard to the rejection of claim 11, the Office Action states:

> Regarding claims 11, 27 and 30-31, combination of Foote '021 and Wilcox '542 teaches "acquiring a first shot and a second shot...." (i.e. col. 3, lines 25-45 of Wilcox" and "determining a duration of transition" (i.e. fig. 7, t4-t5, col. 3, lines 24+ and 35+ of Wilcox) and "generating a video sequence....and training a classifier...." reads on (col. 5, lines 25-29 and cols. 7-8, lines 55-5 of Wilcox).
>
> (Page 4, Office Action mailed August 12, 2004)

Referring the claim 11, above, it is important to appreciate that before the step of generating a video, there is no transition sequence since the first and second shots are transition free. In the third limitation of claim 11, a duration of a transition sequence based on a probability distribution is determined. Thereafter, as per the fourth limitation

of claim 11, a video is generated with a transition sequence from the first shot to the second shot. Wilcox describes a technique for detecting video shot boundaries. However, Wilcox fails to teach or suggest generating a video sequence comprising a transition sequence from a first shot to a second shot, as recited in claim 11.

Moreover, as noted above, Foote merely classifies frames in a video into classes, but does not insert any transition sequences between frames of the video. Thus, the combination of Foote and Wilcox does not teach or suggest all limitations of claim 11, and thus cannot render claim 11 obvious.

Given that claims 12-13 depend on claim 11, it is respectfully submitted that these claims are also not rendered obvious by the combination of Foote and Wilcox.

Regarding claim 26, this claim includes the following limitations:

> acquiring one or more video streams and a probability distribution, said video stream including a shot description;
> determining a duration of a transition sequence according to said probability distribution;
> selecting, at random, a first shot and a second shot from the one or more video streams, each shot being transition free;
> generating said transition sequence of said duration, said transition sequence including a transition effect; and
> training a classifier to detect said transition effect within said generated transition sequence.
>
> (Claim 26, Emphasis Added)

The Office Action rejects claim 26 on the basis of the arguments presented in rejecting claim 11, and does not add any further arguments. As noted above, Foote describes techniques to classify a frame into a class, whereas Wilcox describes a technique for detecting video shot boundaries. Neither Foote nor Wilcox, teach or

suggest inserting a transition effect into a video, as required by the generating limitation of claim 26. Accordingly, it is respectfully submitted that Foote and Wilcox do not teach or suggest all limitations of claim 26, and therefore cannot render claim 26 obvious.

Given that claims 27-32 depend on claim 26, it is respectfully submitted that these claims are also obvious in view of the combination of Foote and Wilcox.

Claim 32 includes the following limitations:

> a transition synthesizer module to generate a video sequence, the video sequence comprising one or more synthesized transition effects; and
> a classifier module, the classifier module to be trained to identify a transition effect based on the generated video sequence.
>
> (Claim 32, Emphasis Added)

Regarding the rejection of claim 32, the Office Action states:

> Regarding claim 32, Foote '021 teaches "method for video seqmentation and classification/training classifier" (i.e. fig. 2), and "determining the probability of the feature vector, which in-fact implements the transition effect" (i.e. page 2, sections 0013-0014). Foote '021 fails to explicitly teach "transition synthesizer". However such a features are well known and used as evidenced by Szeliski '220 (i.e. fig. 2, abstract, lines 10-12) teaches synthesizing the new generated video sequence using identified transitions. Therefore, taking the combined teaching of Foote '021 and Szeliski '220 as a whole, it would have been obvious to one skilled in the art at the time of the invention was made to modify the training classifier with a synthesizer as taught by Szeliski '220. Doing so would place the new video sequence in a synthesized order with respect to frames associated with these transitions.
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> (Page 5, Office Action mailed August 12, 2004)

Szeliski describes generating a new video sequence from frames taken from an input video clip. Szeliski fails to teach or suggest a transition synthesizer that generates a video sequence comprising one or more synthesized transition effects, as recited in claim 32. In the technique of Szeliski, frames of an input video sequence are analyzed in terms of similarity, and a new video sequence is generated by rearranging and duplicating the frames of the original video clip. For there to be a smooth transition between frames, a similarity value characterized by a cost associated with transitioning or jumping from one frame to another is used (see col. 13, lines 30-50). However, each frame in the new video generated by the technique of Szeliski is actually an existing frame from the input video and not a synthesized transition effect.

Based on the forgoing, it is respectfully submitted that the combination of Wilcox and Szeliski does not teach or suggest all limitations of claim 32, and therefore cannot vender claim 32 obvious.

Given that claims 33-35 depend on the claim 32, it is respectfully submitted that these claims are also not obvious in view of the combination of Foote and Szeliski.

It is respectfully submitted that in view of the remarks set forth herein, all rejections have been overcome. All pending claims are now in condition for allowance, which is earnestly solicited.

If the Examiner determines that prompt allowance of these claims could be facilitated by telephone conference, the Examiner is invited to contact Vani Moodley at (408) 720-8300.

Authorization is hereby given to charge our Deposit Account No. 02-2666 for any charges that may be due. Furthermore, if an extension is required, then Applicant hereby requests such an extension.

Respectfully submitted,
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN

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John P. Ward
Reg. No. 40,216

Customer No. 008791
12400 Wilshire Boulevard
Seventh Floor
Los Angeles, CA 90025-1030
(408) 720-8300